

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing Of Claims:

Please amend the claims as follows:

1. (Original) An endpoint processor unit, comprising:
 - a processor block;
 - a timer block that is arranged to provide at least one time based signal to the processor block;
 - a memory block that is arranged to cooperate with the processor block;
 - an analog-to-digital converter that is arranged to provide an interface between an analog signal and the processor block, wherein the analog signal includes encoded data from a power signal, wherein the processor block is arranged to control a sampling rate that is associated with the analog-to-digital converter such that the analog signal is down-converted as an under-sampled signal, and wherein the processor block is arranged to extract the encoded data from the down-converted signal by executing a digital signal processing algorithm that is stored in the memory block, wherein the digital signal processing algorithm is arranged to reject fundamental and harmonic frequencies that are associated with a power-line frequency that is associated with the power signal.

2. (Currently Amended) A method for event processing in an endpoint, comprising:

- executing an idle function while waiting for an event;
- detecting a trigger for the event;
- evaluating the event after the trigger is detected;
- processing a received packet when the event corresponds to a received packet detection;
- recording at least one metering parameter when the event corresponds to a scheduled recording cycle;
- formatting a packet for transmission when the event corresponds to a scheduled reporting cycle wherein formatting the packet further comprises formatting the packet according to a protocol wherein the protocol includes at least one of the following: a asynchronous flag field, a health flag field, and a payload field; and
- starting a packet transmission after formatting the at least one packet for transmission.

3. (Original) The method of claim 2, further comprising:

- detecting a power-up condition;
- evaluating the power-up condition to determine a power-fault status; and
- updating power-failure statistics when a power-fault is detected, wherein the power-fault status corresponds to at least one of: initial power-up, momentary interruption, momentary event, and sustained interruption.

4. (Original) The method of claim 2, wherein processing the received packet further comprises:

checking the received packet for errors;
trapping an error condition when the received packet contains errors;
extracting a command from the received packet when the received packet does not contain errors; and
processing the command.

5. (Original) The method of claim 4, wherein processing the command comprises at least one of: assigning a transmit frequency, assigning a channel, assigning a sub-channel, defining a CRC, defining a packet format, synchronizing a date, synchronizing a time, updating a time-of-use map, adjusting a peak setting, selecting a transmission start time, selecting a time for recording electric meter readings, assigning an endpoint to a group, resetting the system, and starting a demand reporting interval.

6. (Original) The method of claim 4, wherein checking the received packet for errors includes calculating a CRC associated with the received packet.

7. (Original) The method of claim 2, wherein processing the received packet further comprises: extracting an address that is associated with the received packet, ignoring the received packet when the address does not match an identifier that is

associated with the endpoint, and extracting a command from the received packet when the address is matched to the identifier.

8. (Original) The method of claim 2, wherein processing the received packet further comprises: extracting a group address that is associated with the received packet, ignoring the received packet when the group address does not match at least one group identifier that is associated with the endpoint, and extracting a command from the received packet when the group address matches at least one group identifier that is associated with the endpoint.

9. (Currently Amended) ~~The method of claim 2,~~ A method for event processing in an endpoint, comprising:

executing an idle function while waiting for an event;

detecting a trigger for the event;

evaluating the event after the trigger is detected;

processing a received packet when the event corresponds to a received packet detection;

recording at least one metering parameter when the event corresponds to a scheduled recording cycle;

formatting a packet for transmission when the event corresponds to a scheduled reporting cycle;

starting a packet transmission after formatting the at least one packet for transmission; and

wherein formatting a packet for transmission corresponds to formatting a packet according to a protocol, wherein the protocol includes a asynchronous flag field, a health flag field, a payload field, and an error check and detection field, wherein the payload field is defined by a predetermined sequence when the asynchronous flag field is not set, and wherein the payload field is flexibly defined when the asynchronous flag field is set.

10. (Currently Amended) ~~The method of claim 2, further comprising: A~~
method for event processing in an endpoint, comprising:
executing an idle function while waiting for an event;
detecting a trigger for the event;
evaluating the event after the trigger is detected;
processing a received packet when the event corresponds to a received packet
detection;
recording at least one metering parameter when the event corresponds to a
scheduled recording cycle;
formatting a packet for transmission when the event corresponds to a scheduled
reporting cycle;
starting a packet transmission after formatting the at least one packet for
transmission; and
 selecting a packet sequence number based on the current day of the week, and
 wherein formatting the packet for transmission includes organizing a packet payload
 according to the selected packet sequence number.

11. (Currently Amended) ~~The method of claim 2, further comprising: A~~
method for event processing in an endpoint, comprising:
executing an idle function while waiting for an event;
detecting a trigger for the event;
evaluating the event after the trigger is detected;
processing a received packet when the event corresponds to a received packet
detection;
recording at least one metering parameter when the event corresponds to a
scheduled recording cycle;
formatting a packet for transmission when the event corresponds to a scheduled
reporting cycle;
starting a packet transmission after formatting the at least one packet for
transmission; and
indexing a table by the current day of the week, retrieving a group of data
identifiers from the indexed table, and wherein formatting the packet for transmission
includes organizing data that is associated with the retrieved group of a data identifiers
in a payload field of the packet.

12. (Currently Amended) An event processor in an endpoint, comprising:
a means for executing an idle function while waiting for an event;
a means for detecting a trigger for the event;
a means for evaluating the event after the trigger is detected;

a means for processing a received packet when the event corresponds to a received packet detection;

a means for recording at least one metering parameter when the event corresponds to a scheduled recording cycle;

a means for formatting a packet for transmission when the event corresponds to a scheduled reporting cycle wherein formatting the packet further comprises formatting the packet according to a protocol wherein the protocol includes at least one of the following: a asynchronous flag field, a health flag field, and a payload field; and

a means for starting a packet transmission after formatting the at least one packet for transmission.